

Amendments to the Claims

Please amend Claims 1-22 to read as follows.

1. (Currently amended) An ink jet recording apparatus provided with a CPU having plural modes including a mode to reduce ~~the~~ power consumption by suspending ~~the~~ a clock signal as an operational mode, and receiving a signal from power switching means as an NMI interrupt signal for the execution of an NMI interrupt process, comprising:

non-volatile memory means for retaining a power supply status flag;

user logic circuit means for outputting a trigger signal;

a mask signal generating portion for receiving ~~said the~~ trigger signal to generate an NMI interrupt mask signal;

a gate circuit for making ~~said the~~ signal from the power switching means invalid by ~~said the~~ mask signal; and

control means for initiating ~~the~~ operation of the recording apparatus in accordance with ~~said the~~ flag at the time of the execution of ~~said the~~ NMI interrupt process by the input of the signal from ~~said the~~ power switching means, changing ~~said the~~ flag, changing the operational mode of ~~said the~~ CPU, and setting said user logic circuit means to prohibit the NMI interrupt until ~~said the~~ operation is completed, and enabling said user logic circuit means to output ~~said the~~ trigger signal in accordance with ~~said the~~ setting, and said mask signal generating portion to generate ~~said the~~ mask signal for making the signal from ~~said the~~ power switching means invalid.

2. (Currently amended) An ink jet recording apparatus according to Claim 1, wherein if ~~said~~ the flag is ON, ~~the~~ power supply OFF is operated as ~~said~~ the operation to change ~~said~~ the flag to OFF, and as the operational mode change of ~~said~~ the CPU, the clock signal is suspended and the mode is changed to the ~~one~~ mode for reducing the power consumption.

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3. (Currently amended) An ink jet recording apparatus according to Claim 2, wherein ~~said~~ the power supply OFF operation includes ~~the~~ a capping operation to protect ~~the~~ a mounted recording head ~~mounted on said ink jet recording apparatus.~~ head.


4. (Currently amended) An ink jet recording apparatus according to Claim 1, wherein if ~~said~~ the flag is OFF, ~~the~~ power supply ON is operated as ~~said~~ the operation to change ~~said~~ the flag to ON, and as the operational mode change of ~~said~~ the CPU, the clock signal is suspended and the mode is changed from the ~~one~~ mode for reducing the power consumption.

5. (Currently amended) An ink jet recording apparatus according to Claim 4, wherein ~~said~~ the power supply ON operation includes ~~the~~ a recovery operation for recovering ~~the~~ a mounted recording head ~~mounted on said ink jet recording apparatus.~~ head.

6. (Currently amended) An ink jet recording apparatus provided with a CPU having plural modes including a mode to reduce ~~the~~ power consumption by suspending ~~the~~ a clock signal as an operational mode, and executing ~~the~~ an NMI interrupt process with ~~the~~ input of a signal from power switching means as an NMI interrupt signal, comprising:

abnormality detection means for detecting an abnormality;

user logic circuit means for outputting a trigger signal;

 a mask signal generating portion for receiving ~~said~~ the trigger signal to generate an NMI interrupt mask signal;

a gate circuit for making ~~said~~ the signal from the power switching means invalid by ~~said~~ the mask signal; and

control means for setting ~~the~~ prohibition of ~~said~~ the NMI interrupt for said user logic circuit means in accordance with an abnormal signal from said abnormality ~~detecting~~ detection means, and outputting ~~said~~ the trigger signal in accordance with ~~said~~ the setting to enable ~~said~~ the mask signal to be output from said mask signal generating portion to said gate circuit in accordance with ~~said~~ the output trigger signal for making the signal from ~~said~~ the power switching means invalid.

7. (Currently amended) An ink jet recording apparatus according to Claim 6, further comprising:

[[a]] second abnormality detection means, wherein

said gate circuit further executes ~~the~~ a logical operation of an abnormal signal from said second abnormality detection means.

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8. (Currently amended) An ink jet recording apparatus according to Claim 6, wherein said abnormality detection means detects ~~the~~ an abnormal temperature rise of ~~the~~ a mounted recording head ~~mounted on said ink jet recording apparatus.~~ head.

9. (Currently amended) An ink jet recording apparatus according to Claim 7, wherein said second abnormality detection means detects ~~the~~ excessive voltage of ~~the~~ a power supply ~~provided for said ink jet recording apparatus.~~ supply.

10. (Currently amended) An ink jet recording apparatus according to Claim 1, ~~wherein said~~ further comprising a recording head is provided with a plurality of recording members including ~~an~~ electrothermal converting ~~element~~ elements for generating thermal energy ~~as energy~~ for discharging ink.

11. (Currently amended) An ink jet recording apparatus provided with a CPU having plural modes including a mode to reduce ~~the~~ power consumption by suspending ~~the~~ a clock signal as an operational mode, and input means for inputting a signal from power ~~supply~~ switching means as an NMI interrupt signal for executing ~~the~~ an NMI interrupt process, comprising:

user logic circuit means for outputting a trigger signal;

a mask signal generating portion for receiving ~~said~~ the trigger signal to generate an NMI interrupt mask signal;

a gate circuit for making ~~said~~ the signal from the power switching means invalid by ~~said~~ the mask signal; and

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control means for setting ~~the~~ prohibition of ~~said~~ the NMI interrupt for said user logic circuit means when the ~~said~~ NMI interrupt signal is inputted by ~~said~~ the input means for a designated number of times subsequent to ~~said~~ the NMI interrupt process executed by the input of ~~said~~ the signal from ~~said~~ the power switching means, and enabling said user logic circuit means to output ~~said~~ the trigger signal in accordance with ~~said~~ the setting, and said mask signal generating portion to generate ~~said~~ the mask signal in accordance with the output of ~~said~~ the trigger signal for making the signal from ~~said~~ the power switching means invalid.

12. (Currently amended) A method for controlling an ink jet recording apparatus provided with a CPU having plural modes including a mode to reduce ~~the~~ power consumption by suspending ~~the~~ a clock signal as an operational mode, and executing an NMI interrupt process with ~~the~~ input of a signal from power switching means as an NMI interrupt signal, comprising the ~~following~~ steps of:

retaining a power supply status flag ~~on~~ in non-volatile memory means;

outputting a trigger signal from user logic circuit means; and

generating a mask signal in ~~the~~ an NMI interrupt signal generating portion for ~~the~~ NMI interrupt when ~~said~~ the trigger signal is received, wherein

the an operational process of the ink jet recording apparatus is executed in accordance with ~~said~~ the flag retained in said flag retaining step when ~~said~~ the NMI interrupt process is executed by the signal from ~~said~~ the power switching means, and ~~said~~ the flag retained in said flag retaining ~~process~~ step is updated in said trigger signal outputting step for outputting the trigger signal in accordance with the setting for ~~said~~ the user logic circuit, and the mask signal is generated in ~~said~~ the mask signal generating step in accordance with ~~said~~ the trigger signal for making the signal from ~~said~~ the power switching means invalid by the generation of ~~said~~ the mask signal until ~~said~~ the operational process is completed.

13. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 12, wherein if ~~said~~ the flag is ON, ~~said operation~~ the operational process is an operational process of ~~the~~ power supply OFF, and ~~said~~ the flag is changed to suspend the clock signal as the operational mode change of ~~said~~ the CPU for changing the mode to the ~~one~~ mode for reducing the power consumption.

14. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 13, wherein ~~said~~ the power supply OFF ~~operation~~ operational process includes ~~the~~ a capping process to protect ~~the~~ a recording head mounted on ~~said~~ the ink jet recording apparatus.

15. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 12, wherein if ~~said~~ the flag is OFF, ~~said operation~~ the operational process is an operational process of ~~the~~ power supply ON, and ~~said~~ the flag is changed to suspend the clock signal as the operational mode change of ~~said~~ the CPU for changing the mode from the ~~one~~ mode for reducing the power consumption.

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16. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 15, wherein ~~said~~ the power supply ON ~~operation~~ operational process includes ~~the~~ a recovery process for recovering ~~the~~ a recording head mounted on ~~said~~ the ink jet recording apparatus.

17. (Currently amended) A method for controlling an ink jet recording apparatus provided with a CPU having plural modes including a mode to reduce ~~the~~ power consumption by suspending ~~the~~ a clock signal as an operational mode, and executing an NMI interrupt process with ~~the~~ input of a signal from power switching means as an NMI interrupt signal, comprising the ~~following~~ steps of:

detecting an abnormality by abnormality detection means;

retaining a power supply status flag ~~on~~ in non-volatile memory means;

outputting a trigger signal from user logic circuit means; and

generating a mask signal in ~~the~~ an NMI interrupt signal generating portion for ~~the~~ NMI interrupt when ~~said~~ the trigger signal is received, wherein

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the abnormality is detected in said abnormality detecting step to output ~~said~~ the trigger signal in said trigger signal outputting step in accordance with ~~said~~ the abnormality, and ~~said~~ the mask signal is generated in said mask signal generating step in accordance with ~~said~~ the output trigger signal for making the signal from ~~said~~ the power switching means invalid by ~~said~~ the generated mask signal.

18. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 17, further comprising:

a second abnormality detecting step for detecting an abnormality by second abnormality detection means, wherein

~~said~~ the second abnormality detection means detects an abnormality, and the abnormality detection means outputs a signal [[to said gate circuit]].

19. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 17, wherein ~~the~~ an abnormal temperature of ~~the~~ a recording head mounted on ~~said~~ the ink jet recording apparatus is detected in said abnormality detecting step.

20. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim ~~17~~ 18, wherein ~~the~~ excessive voltage of ~~the~~ power supply provided for ~~said~~ the ink jet recording apparatus is detected in said second abnormality detecting step.

21. (Currently amended) A method for controlling an ink jet recording apparatus according to Claim 12, wherein ~~said~~ a recording head is provided with plural recording members including ~~an~~ electrothermal converting ~~element~~ elements for generating thermal energy ~~as energy~~ for discharging ink.

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22. (Currently amended) A method for controlling an ink jet recording apparatus provided with a CPU having plural modes including a mode to reduce the power consumption by suspending ~~the~~ a clock signal as an operational mode, and input means for inputting a signal from power switching means as an NMI interrupt signal, comprising the following steps of:

deciding whether or not ~~said~~ the NMI interrupt signal is inputted into ~~said~~ the input means ~~for~~ a designated number of times;

outputting a trigger signal from user logic circuit means; and

generating a mask signal in ~~the~~ an NMI interrupt signal generating portion for the NMI interrupt by receiving ~~said~~ the trigger signal, wherein

the an NMI interrupt prohibition is set for ~~said~~ user logic circuit means when the input of ~~said~~ the NMI interrupt signal is made in the designated number of times in said ~~determining~~ deciding step subsequent to ~~said~~ the NMI interrupt process executed by the input of signal from ~~said~~ the power switching means, the trigger signal is output in said trigger signal ~~generating~~ outputting step in accordance with ~~said~~ the setting to the user logic circuit means for generating the mask signal in said mask signal generating step in accordance with the output of ~~said~~ the trigger signal.